

APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATION Enter a description of this application to identify it on the main menu:  
STA for Temporary Operation of T&C Earth Station for Earth Observation Satellite

1. Applicant

Name: Astro Digital US, Inc. Phone Number: 650-919-4032  
DBA Name: Fax Number:  
Street: NASA Ames Research Park, Suite E-Mail: jan@astrodigital.com  
503  
340 Cody Road  
City: Moffett Field State: CA  
Country: USA Zipcode: 94035  
Attention: Jan A King

File # SES-STA-20171221-01357



Call Sign E170192 Grant Date 1/3/2018  
(or other identifier)

Term Dates

From 1/10/2018 To: 2/29/2018

Approved: Michael E. Blain

*with conditions*

Applicant: Astro Digital US, Inc.  
File No: SES-STA-20171357-01357  
Call Sign: E170192

Astro Digital US, Inc. is granted special temporary authority for 30 days, beginning January 10, 2017 to operate a fixed earth station antenna in Sunnyvale, California to perform tracking, telemetry and command ("TT&C") with the Astro Digital Landmapper (NGSO) satellite (S3014) on center frequencies 402.99 MHz (Earth-to-space) and 400.5 MHz (space-to-Earth) under the following conditions.

1. Operations shall be on an unprotected, non-interference basis with respect to other authorized stations, including federal stations.
2. Astro Digital's request for a waiver to operate TT & C links in the 402.8-403 MHz frequency band is granted. Astro Digital shall tune TT & C UHF links to an agreed frequency range with NOAA to minimize interference to NOAA GOES Data Collection System (DCS) and radiosonde operations, and continue to work closely with NOAA to identify and implement any further measures needed to avoid radio frequency interference to these systems.
3. Astro Digital's TT&C operations in the space-to-Earth direction are limited to a center frequency of 400.5 MHz, except as necessary for a period immediately following (i) the deployment of the satellite or (ii) a satellite software reset, resulting in satellite transmissions returning to the default transmission channel, in both cases to allow for the retuning of transmissions from 400.175 MHz to 400.5 MHz.
4. Astro Digital's TT & C operations in the Earth-to-space direction are limited to a center frequency of 402.9 MHz, except as necessary for a period immediately following (i) the deployment of the satellite or (ii) a satellite software reset, resulting in the satellite returning to its default channel, in both cases to allow for the retuning of the satellite receive channel from 402.6 MHz to 402.9 MHz.
5. Astro Digital must launch the space station and operate it in accordance with the station authorization no later than January 31, 2018. This authorization will be null and void automatically, without further Commission action, if Astro Digital fails to comply with this requirement.
6. Astro Digital US, Inc. shall be aware that future non-federal launch and early orbit operations will be considered on a case-by-case basis, especially for requests in the band 399-402 MHz, and Astro Digital US, Inc. shall have no expectations that future operations will be approved.
7. All transmissions in the band 399-402 MHz must comply with national and international power flux-density limits.
8. All operations must comport with SAT-LOA-20170508-00071 authorization parameters.
9. Any action taken or expense incurred as a result of operations pursuant to this STA is solely at Astro Digital US, Inc.'s risk.

This grant is issued pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and is effective upon release.



File # SES-STA-20171221-01357

Call Sign E170192 Grant Date 1/3/2018  
(or other identifier)

Term Dates  
From 1/10/2018 To 2/19/2018

Approved: [Signature]

<b>2. Contact</b>			
<b>Name:</b>	Jan A. King	<b>Phone Number:</b>	650-919-4032
<b>Company:</b>	Astro Digital US, Inc.	<b>Fax Number:</b>	
<b>Street:</b>	NASA Ames Research Park, Suite 503 340 Cody Road	<b>E-Mail:</b>	jan@astrodigital.com
<b>City:</b>	Moffett Field	<b>State:</b>	CA
<b>Country:</b>	USA	<b>Zipcode:</b>	94035 -
<b>Attention:</b>		<b>Relationship:</b>	Engineer
(If your application is related to an application filed with the Commission, enter either the file number or the IB Submission ID of the related application. Please enter only one.)			
3. Reference File Number SESLIC2017101701179 or Submission ID			
4a. Is a fee submitted with this application?			
<input checked="" type="radio"/> If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R. Section 1.1114).			
<input type="radio"/> Governmental Entity <input type="radio"/> Noncommercial educational licensee			
<input type="radio"/> Other (please explain):			
4b. Fee Classification CGX - Fixed Satellite Transmit/Receive Earth Station			
5. Type Request			
<input checked="" type="radio"/> Use Prior to Grant <input type="radio"/> Change Station Location <input type="radio"/> Other			
6. Requested Use Prior Date			
01/10/2018			

7. CityMoffett Field	8. Latitude (dd mm ss.s h) 37 24 34.0 N
9. State CA	10. Longitude (dd mm ss.s h) 122 3 12.0 W
11. Please supply any need attachments. Attachment 1: STA Request Attachment 2: Attachment 3:	
12. Description. (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) <div style="border: 1px solid black; padding: 5px;">Applicant seeks special temporary authority to operate an existing earth station with its Landmapper satellites pending the relocation of its earth station facilities.</div>	
13. By checking Yes, the undersigned certifies that neither applicant nor any other party to the application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Act of 1988, 21 U.S.C. Section 862, because of a conviction for possession or distribution of a controlled substance. See 47 CFR 1.2002(b) for the meaning of "party to the application" for these purposes. Yes <input checked="" type="radio"/> No <input type="radio"/>	
14. Name of Person Signing Jan A. King	15. Title of Person Signing Chief Technical Officer
WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND / OR IMPRISONMENT (U.S. Code, Title 18, Section 1001), AND/OR REVOCATION OF ANY STATION AUTHORIZATION (U.S. Code, Title 47, Section 312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).	

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**THE FOREGOING NOTICE IS REQUIRED BY THE PAPERWORK REDUCTION ACT OF 1995, PUBLIC LAW 104-13, OCTOBER 1, 1995, 44 U.S.C. SECTION 3507.**

### Request for Special Temporary Authorization

Astro Digital US, Inc. (“Astro Digital”) hereby requests special temporary authority (“STA”) for 30 days,<sup>1</sup> commencing on the deployment of the Astro Digital Landmapper satellite<sup>2</sup> from the PSLV launch vehicle on or about January 10, 2018, to allow the earth station identified below to communicate with the satellite for in-orbit testing and transmission of telemetry and command signals, consistent with the technical parameters specified in the associated pending application for regular authority.<sup>3</sup> This STA application is necessary because Astro Digital is relocating its earth station facility<sup>4</sup> and the new location, which is associated with the earth station application for regular authority, is not expected to be operational until after the launch of the satellite.<sup>5</sup>

The Commission has previously found that grant of earth station STAs to communicate with satellites, pending the processing of permanent applications, serves the public interest, convenience, and necessity by allowing for the deployment of new and additional satellite services in a timely manner.<sup>6</sup> Grant of this STA is necessary to allow for communications with Astro Digital’s Landmapper satellite, pending the relocation of its permanent earth station facility.

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<sup>1</sup> See 47 C.F.R. 25.120(b)(4).

<sup>2</sup> See Astro Digital Application, IBFS File No. SAT-LOA-20170508-00071 (granted in part Dec. 14, 2017).

<sup>3</sup> See IBFS File No. SES-LIC-20171017-01179 (filed Oct. 17, 2017).

<sup>4</sup> Astro Digital currently operates this existing earth station facility for telemetry and command of the company’s Perseus-M1, and Perseus-M2 under Part 5 experimental licenses. See ELS File No. 0317-EX-CR-2017; see also ELS File No. 0021-EX-CM-2016 (seeking authority to operate an additional experimental satellite).

<sup>5</sup> Astro Digital will be filing an amendment application to its pending earth station application for regular authority, reflecting a recent change in the location of its earth station to 3171 Jay St., Santa Clara CA, 95054 (37° 22’ 48” N, 121° 57’ 40” W).

<sup>6</sup> See, e.g., Stamp Grant, Spire, SES-STA-20160324-00286 (granted Apr. 28, 2016); Stamp Grant, DG Consents Sub, Inc., SES-STA-20140717-00605 (granted Aug. 12, 2014); Stamp Grant, EchoStar Broadcasting Corporation, SES-STA-20130108-00019 (granted Jan. 10, 2013); Stamp Grant, Inmarsat Hawaii Inc., SES-STA-20080311-00275 (granted Apr. 4, 2008).

**Earth Station Frequencies:**

Astro Digital seeks authority to operate on the following frequencies, consistent with the FCC's recent partial grant of its space station license and its spectrum coordination with relevant federal agencies, and incorporates by reference the relevant waiver requests stated in the space station license application.<sup>7</sup>

Link Direction	Frequency Band	Bandwidth Occupied	Max. Data Rate
Uplink (command)	402.88-400.92 MHz	40 kHz	38.4 kbps
	402.58-402.62 MHz <sup>8</sup>		
Downlink (telemetry)	400.48-400.52 MHz	40 kHz	38.4 kbps
	400.155-400.195 MHz <sup>9</sup>		

Uplink output power is 41 dBW EIRP. Astro Digital understands that its authorized operations will be on an unprotected, non-harmful interference basis.

**Site Address:**

NASA Ames Research Park  
340 Cody Road, Building 503  
Moffett Field CA, 94035

**Earth Station coordinates:**

**Latitude:** 37° 24' 34" N

**Longitude:** 122° 03' 12" W

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<sup>7</sup> See Astro Digital Application, IBFS File No. SAT-LOA-20170508-00071 (granted in part Dec. 14, 2017).

<sup>8</sup> Astro Digital has requested that the FCC correct its space station license to reflect that TT&C operations in the Earth-to-space direction are limited to a center frequency of 402.9 MHz, except as necessary for a period immediately following (i) the deployment of the satellite or (ii) a satellite software reset, resulting in the satellite returning to its default channel, in both cases to allow for the retuning of the satellite receive channel from 402.6 MHz to 402.9 MHz.

<sup>9</sup> As specified in the partial grant of the space station license, Astro Digital's TT&C operations in the space-to-Earth direction are limited to a center frequency of 400.5 MHz, except as necessary for a period immediately following (i) the deployment of the satellite or (ii) a satellite software reset, resulting in satellite transmissions returning to the default transmission channel, in both cases to allow for the retuning of transmissions from 400.175 MHz to 400.5 MHz. *Id.* at ¶ 7.